SERVICE MANUAL

G-AEP Model



SPECIFICATIONS

Model Name Using Similar Mechanism DXA-D7 **DECK A** TCM-YM47CW-31 Tape Transport Mechanism Type TCM-YM47CW-24 **DECK B**

Recording system

4-track 2-channel stereo

Fast-forward and rewind time

Approx. 120 sec. (with C-60 cassette)

Bias frequency 105 kHz

Signal-to-noise ratio (NAB, at peak level)

Dolby NR switch Cassette	OFF	B-TYPE ON	C-TYPE ON
TYPE IV (Sony METAL-ES)	58 dB	65 dB	71 dB
TYPE II (Sony UX-S)	56 dB	63 dB	69 dB
TYPE I (Sony HF-S)	54 dB	61 dB	67 dB

Total harmonic distortion

1.0% (with Sony METAL-ES cassette)

Frequency response (DOLBY NR OFF)

TYPE IV cassette (Sony METAL-ES)	30 – 15,000 Hz (±3 dB DIN) 30 – 13,000 Hz (±3 dB, 0 VU recording) 20 – 14,000 Hz
TYPE II cassette	30 — 14,000 Hz (±3 dB DIN)
(Sony UX-S)	20 — 15,000 Hz
TYPE I cassette	30 — 13,000 Hz (±3 dB)
(Sony HF-S)	20 — 16,000 Hz

Wow and flutter 0.12% WRMS (NAB), $\pm 0.2\%$ (DIN)

Inputs

Connector	Туре	Sensitivity	Impedance
LINE IN	phono	77.5 mV (-20 dB)	10 kilohms

Outputs

Connector	Туре	Rated output level	Load impedance
LINE OUT	phono	0.44 V (-5 dB) at load impedance 47 kilohms	over 50 kilohms
HEAD- PHONES	stereo phone	0.3 mW at load impedance 32 ohms	·

General

Power requirements

220 V AC (240 V AC adjustable by authorized Sony personnel), 50/60 Hz

Power consumption

Approx. $430 \times 115 \times 250 \text{ mm (w/h/d)}$ Dimensions

 $(17 \times 4^{5}/_{8} \times 9^{7}/_{8} \text{ inches})$

including projecting parts and controls

Weight Approx. 3.5 kg (7 lbs 12 oz)

Supplied accessories

Connecting ocrd (2)





FEATURES

Double deck

The unit consists of two decks: deck A for playback and deck B for recording/playback.

Two-speed dubbing

Tape dubbing can be performed either at normal speed or at high (double) speed.

Dolby NR* switches

The unit is equipped with switches for the Dolby B-type NR system and for the C-type NR system which reduces tape noise twice as effectively as the B-type system.

* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol DD are trademarks of Dolby Laboratories Licensing Corporation.

SAFETY-RELATED COMPONENT WARNING!!

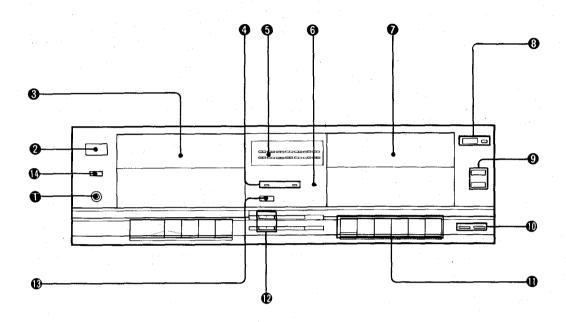
COMPONENTS IDENTIFIED BY SHADING AND MARK

A ON THE SCHEMATIC DIAGRAMS AND IN THE
PARTS LIST ARE CRITICAL TO SAFE OPERATION.
REPLACE THESE COMPONENTS WITH SONY PARTS
WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS
MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

TABLE OF CONTENTS

Secti	<u>ion</u> <u>Title</u>	_P	age
Feat	ures		
1.	ADJUSTMENTS		
	Mechanical Adjustmetns		
2.	DIAGRAMS		
2-1. 2-2.	Mounting Diagram		
3.	EXPLODED VIEWS AND PARTS LIST		15
4.	ELECTRICAL PARTS LIST	•	19
Trou	ble Checks		24

LOCATION AND FUNCTION OF CONTROL



- **HEADPHONES jack** (stereo phone jack)
- 2 POWER switch
- Cassette holder (deck A)
- SPEED indicators HIGH or NORMAL lights up according to the DUBBING SPEED switch setting during the tape dubbing.
- ⑤ PEAK LEVEL METERS Show the peak input level of each channel during recording, and recorded levels in the playback mode.
- **(6)** REC (record) indicator
 Lights up when on the deck B is depressed.
- Cassette holder (deck B)

- COUNTER (tape counter) and RESET button for deck B Use the tape counter as a reference when searching for recorded materials. To reset to zero, press the RESET button.
- TAPE (DECK-B) select switches
 Select the tape type used on the deck B.
- DOLBY NR (Noise Reduction) switches
 Select Dolby B ro C to record or play back with the Dolby NR system.
- Tape operation buttons
 REC (record) button (only for deck B)
 - ▷ PLAY button➡■ REW (rewind) button
 - FF (fast-forward) button
 - STOP/EJECT button
 - PAUSE button
- PREC LEVEL (recording level) controls
- **®** DUBBING SPEED switch
 Depress for high speed dubbing (□ HIGH). Press again to return to the normal dubbing speed (□ NORMAL).
- TAPE (DECK-A) select switch
 Select the tape type used on the deck A.

SECTION 1 ADJUSTMENTS

1-1. MECHANICAL ADJUSTMENTS PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:

record/playback head

pinch roller

erase head

rubber beits

capstan

idlers

Torque Measurement

Torque	Torquement	Meter reading
FWD	CQ-102C	30 - 70 g·cm (0.42 - 0.97 oz·inch)
FWD Back tension	CQ-102C	1.5 - 5.5 g·cm (0.020 - 0.076 oz·inch)
FF. REW	CQ-201B	63 g·cm or more 0.87 oz·inch)

1.2. ELECTRICAL ADJUSTMENTS

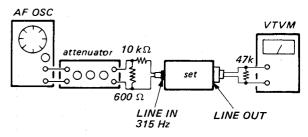
- 1. Demagnetize the record/playback and erase head with a head demagnetizer.
- Do not use a magnetized screwdriver for the adjustments.
- 3. After the adjustments, apply suitable locking compound to the parts adjusted.
- 4. The adjustments should be performed with the rated power supply voltage unless otherwise noted.
- 5. The adjustments should be performed in the order given in this service manual. (As a general rule, playback circuit adjustment should be completed before performing recording circuit adjustment.)
- 6. The adjustments should be performed for both L-CH and R-CH.
- Switches and controls should be set as follows: unless otherwise specified.

DOLBY NR switch: OFF

TAPE select switch: TYPE I (NORMAL)

(DECK-B)

Mode: record

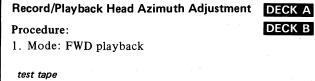


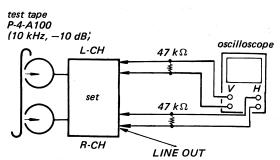
Standard Input Level

	LINE IN
source impedance	10 kΩ
input level	0.25 V (-10 dB)

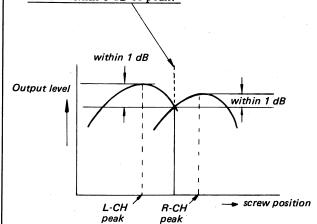
Standard Output Level

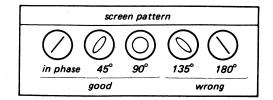
	LINE OUT
load impedance	47 kΩ
output level	0.44 V (-5 dB)





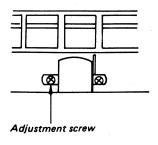
 Turn the adjustment screw and check output peaks. If the peaks do not match for L-CH and R-CH, turn the adjustment screw so that outputs match within 1 dB of peak.

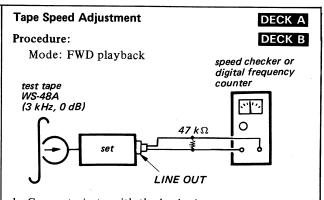




3. After the adjustments, apply suitable locking compound to the parts adjusted.

Adjustment Location:





1. Connect pin to with the lead wire. (CN408)

Specification: high speed

Speed checker	Digital frequency counter	
0 ±0.5%	5,980 ±30 Hz	

Frequency difference between the beginning and the end of the tape should be within 1.5% (90 Hz).

Adjustment location:

DECK-A side RV401 DECK-B side RV403

2. Remove the wire in step 1. (CN408)

Specification: normal speed

Speed checker	Digital frequency counter
0 ±0.3%	2,980 ±10 Hz

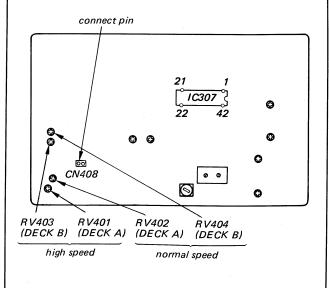
Frequency difference between the beginning and the end of the tape should be within 1.5% (45 Hz).

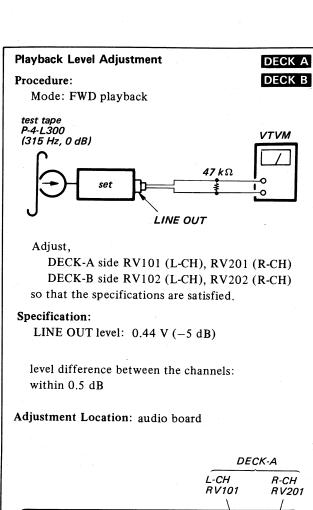
Adjustment location:

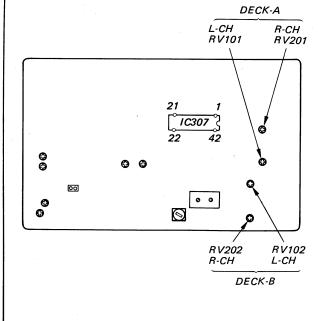
DECK-A side RV402 DECK-B side RV404

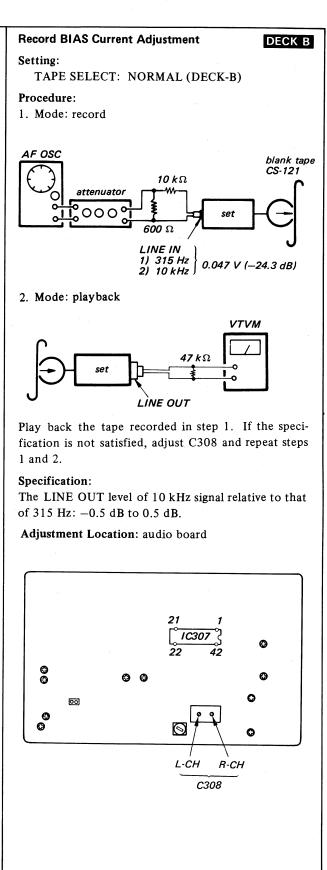
3. If the specifications are not satisfied, repeat step 1 and 2.

Adjustment Location: audio board









Record Le

Setting:

TAPE S

Procedure

1. Mode:

AF OSC

2. Mode: r

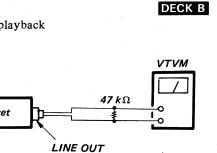
Play back fication i

RV203 (R

Specificat

LINE OU'

Adjustmer



DECK A

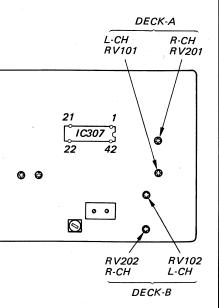
ide RV101 (L-CH), RV201 (R-CH) ide RV102 (L-CH), RV202 (R-CH) ecifications are satisfied.

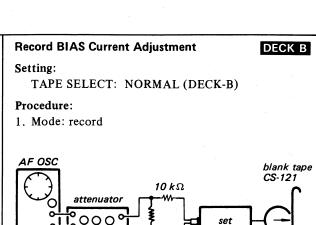
evel: 0.44 V (-5 dB)

Adjustment

ce between the channels:

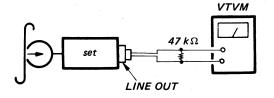
ation: audio board





LINE IN 1) 315 Hz 2) 10 kHz 0.047 V (-24.3 dB)

2. Mode: playback

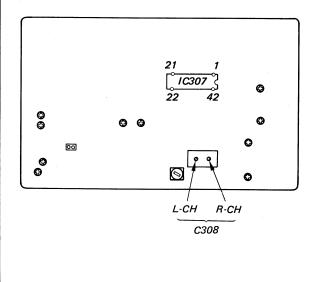


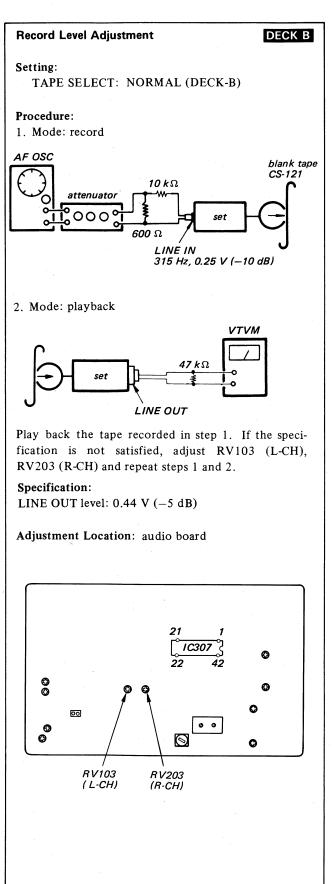
Play back the tape recorded in step 1. If the specification is not satisfied, adjust C308 and repeat steps 1 and 2.

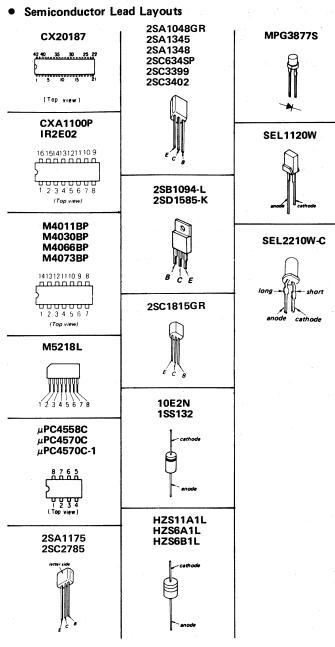
Specification:

The LINE OUT level of 10 kHz signal relative to that of 315 Hz: -0.5 dB to 0.5 dB.

Adjustment Location: audio board







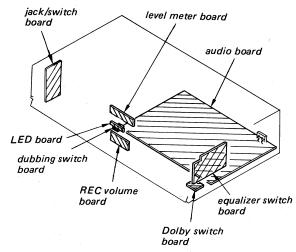
TC-W200

TC-W200

SECTION 2 DIAGRAMS

2-1. MOUNTING DIAGRAM

- See page 7 for Semiconductor Lead Layouts.
- CIRCUIT BOARDS LOCATION

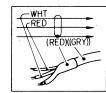


• SEMICONDUCTOR LOCATION

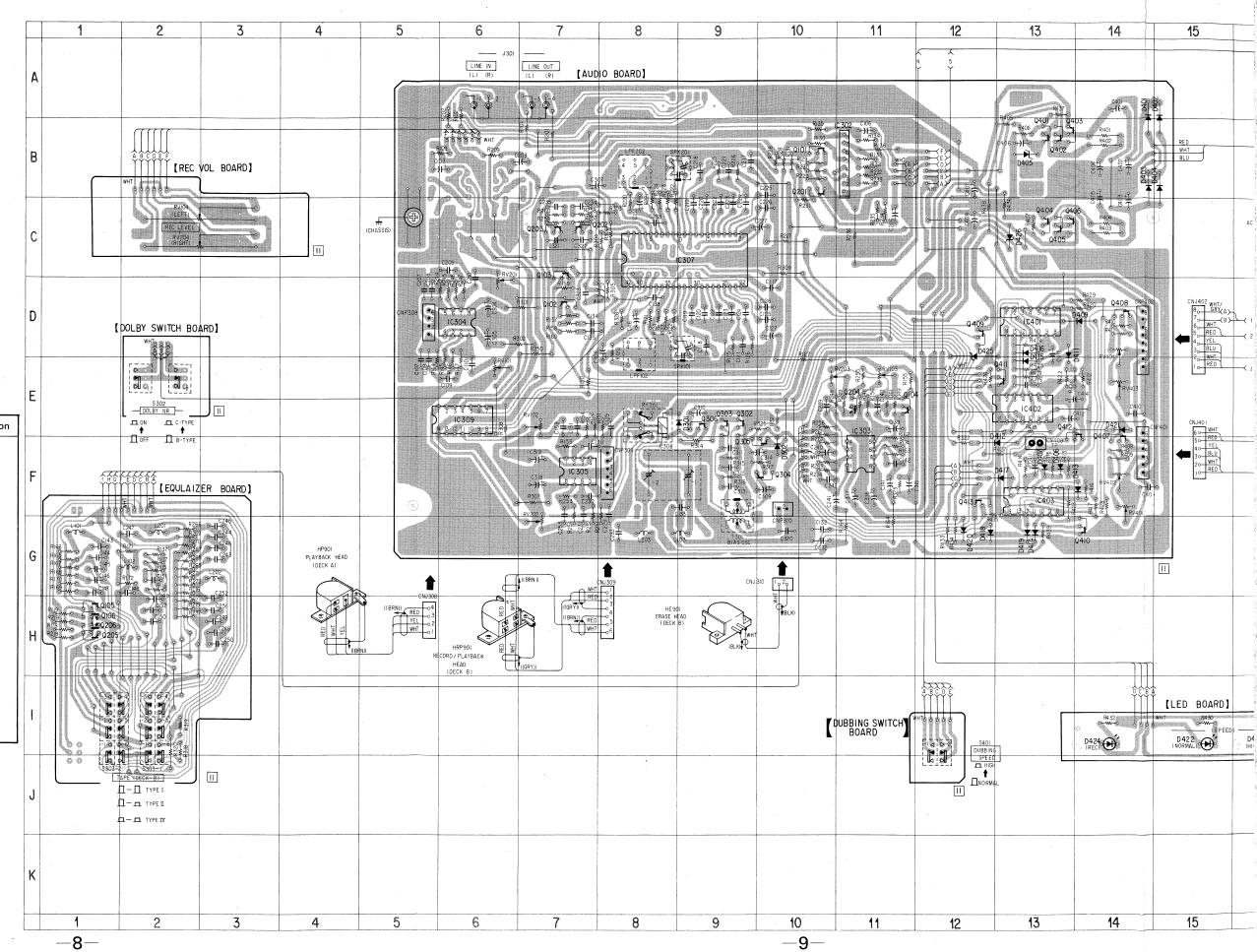
Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D101 D102 D103 D104 D105 D106 D107 D202 D203 D204 D205 D206 D207 D301 D302 D401 D402 D403 D404 D405 D406 D407 D409 D411 D412 D413 D414	A-22 A-21 A-21 A-20 A-20 A-20 A-20 B-21 B-21 B-21 B-20 B-20 B-20 B-20 B-20 B-10 A-14 A-15 B-13 F-13 F-13 F-13 F-13 F-13 F-13 F-14 D-13 D-13 D-14 D-13 D-14 D-13 D-14 D-14 D-15 D-15 D-16 D-16 D-16 D-16 D-16 D-16 D-16 D-16	D415 D416 D417 D418 D419 D420 D421 D422 D423 D424 D425 D426 IC101 IC201 IC302 IC303 IC304 IC305 IC307 IC309 IC401 IC402 IC403 Q101 Q102 Q103	E-13 D-13 F-13 G-12 G-13 G-12 E-14 I-15 I-16 I-14 D-12 C-13 B-22 B-20 B-11 F-11 D-6 F-7 C-9 E-6 D-13 E-13 F-13 B-10 D-7 C-7	Q104 Q105 Q106 Q201 Q202 Q203 Q204 Q205 Q206 Q302 Q303 Q304 Q305 Q401 Q402 Q403 Q404 Q405 Q406 Q407 Q406 Q407 Q408 Q409 Q410 Q411 Q411 Q412 Q413	E-11 H-1 H-1 B-10 C-7 C-7 E-11 H-1 E-9 F-10 E-9 B-13 B-13 C-13 C-13 C-13 C-13 F-14 D-14 D-12 G-14 E-13 F-12

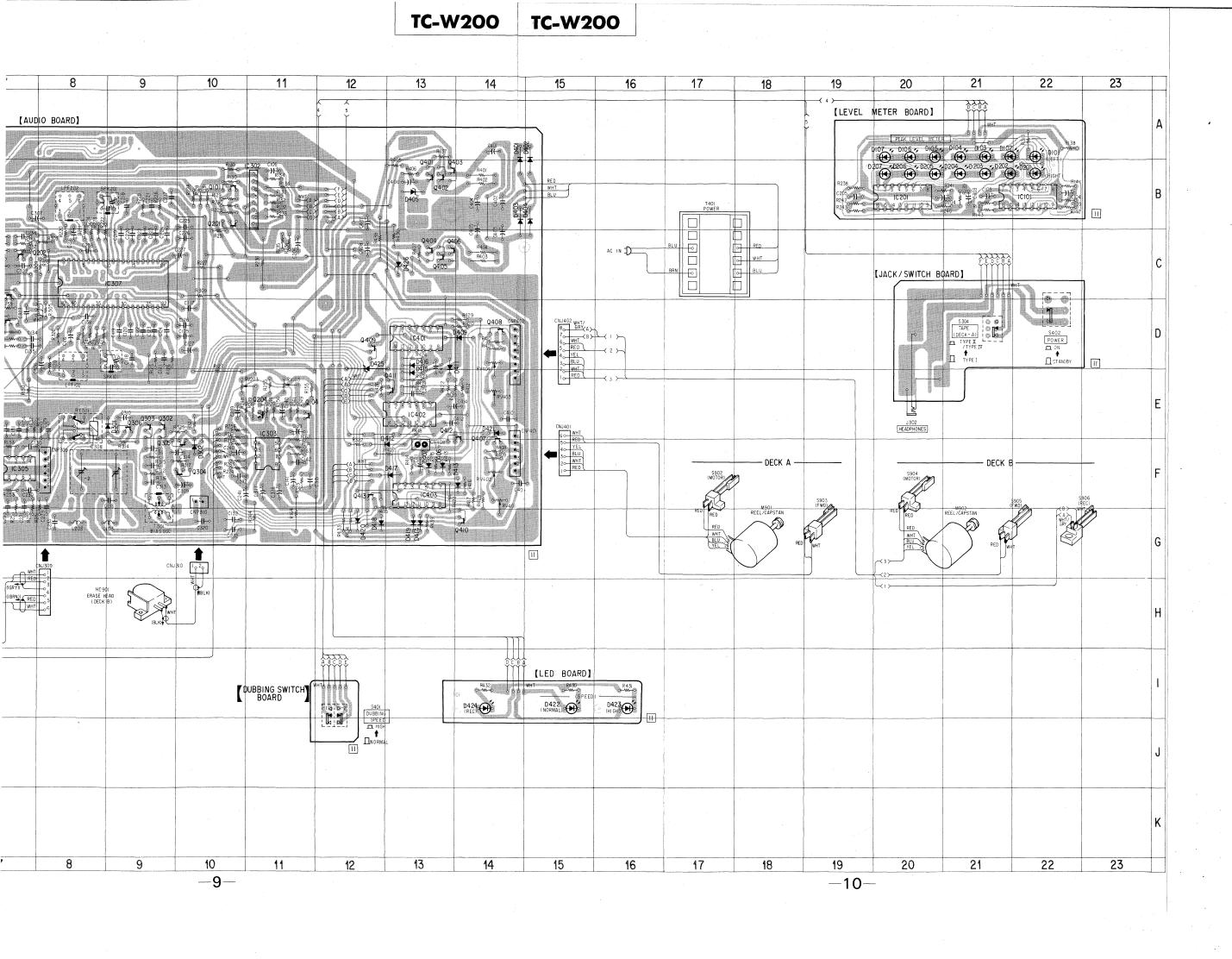
Note:

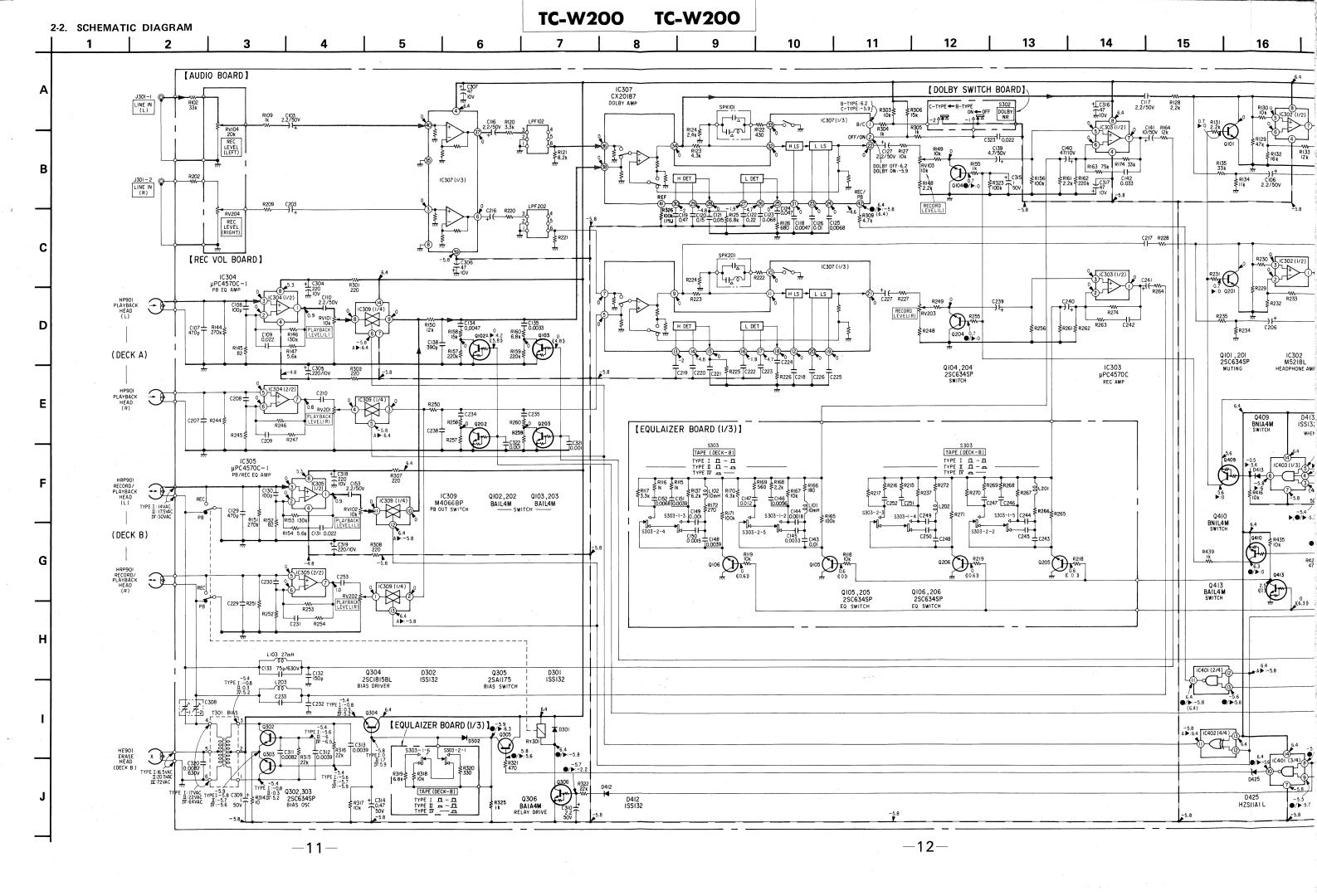
• Color code or sleeving over the end of the jacket.

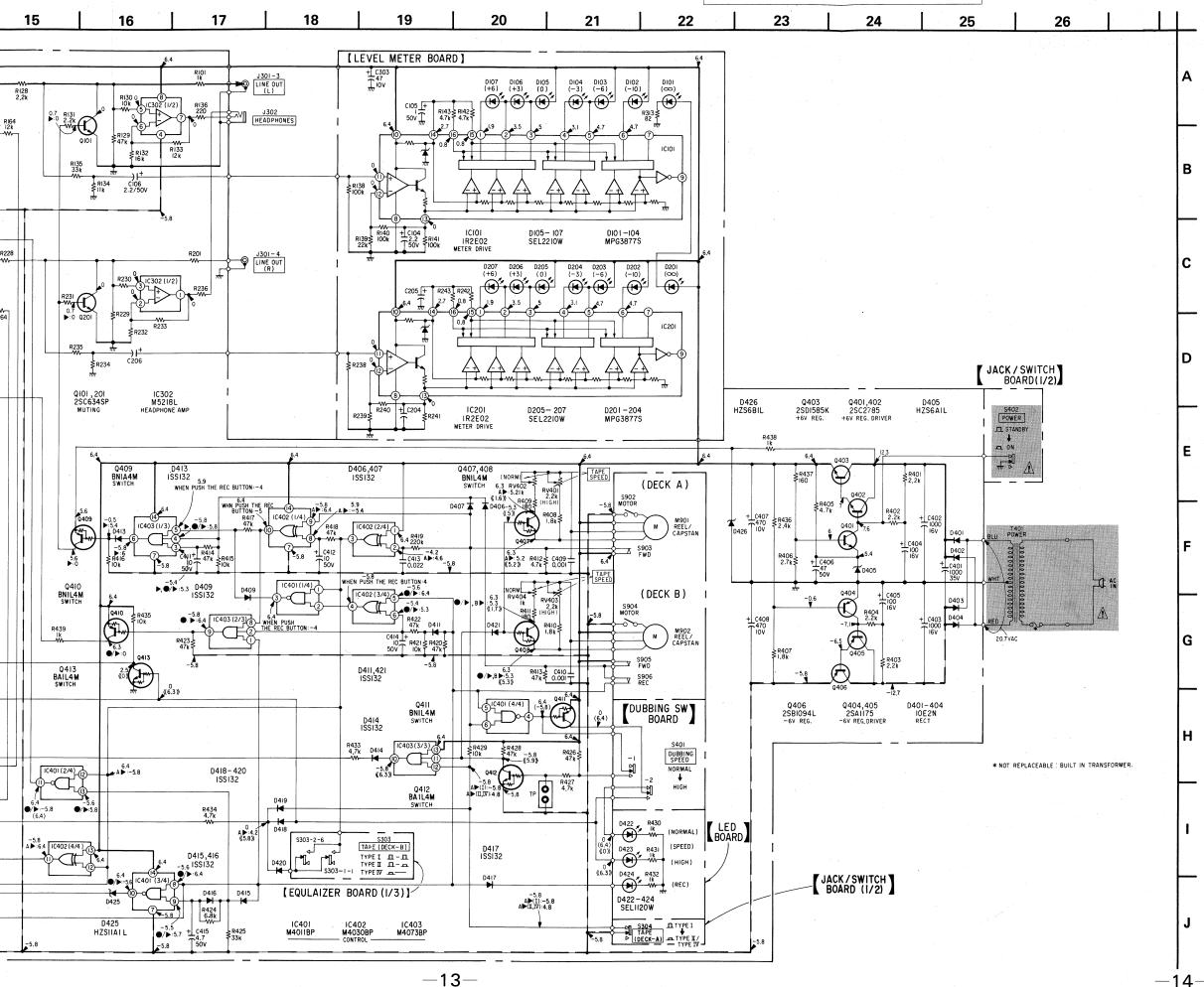


- $\bullet \quad \circ ----$: parts extracted from the component side.
- • : parts extracted from the conductor side.









TC-W200

TC-W200

Note:

- All capacitors are in μF unless otherwise noted. pF: $\mu \mu F$ 50WV or less are not indicated except for electrolytics and tantalums.
- ullet All resistors are in Ω and ${}^{1\!\!/}_{4\!\!/}$ W or less unless otherwise specified.
- : signal path.
 - === : B+ bus.
- **===** : B- bus.
- Voltages are dc with respect to ground unless otherwise
- Readings are taken under no-signal conditions with a VOM (50 kΩ/V).
- A ▶ : PLAY (DECK-A) B ► : PLAY (DECK-B)
- ●/▶ : REC (DECK-B)
- < >: NORMAL SPEED DUBBING
- >>: HIGH SPEED DUBBING

Switch

Ref. No.	Switch	Position
S302-1	DOLBY NR ON/OFF	OFF
S302-2	DOLBY NR	B-TYPE
	C-TYPE/B-TYPE	
S303	TAPE (DECK-B)	NORMAL
S304	TAPE DECK-A	TYPE I
S401	DUBBING SPEED	NORMAL
S402	POWER	_
S902 (DECK-A)	(MOTOR)	OFF
S903 (DECK-A)	(FWD)	ON
S904 (DECK-B)	(MOTOR)	OFF
S905 (DECK-B)	(FWD)	ON
S906 (DECK-B)	(REC)	OFF

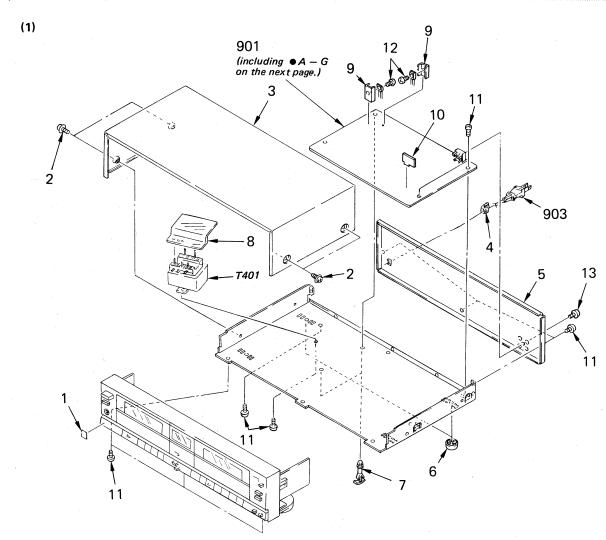
Note: The components identified by shading and mark A are critical for safety. Replace only with part number specified.

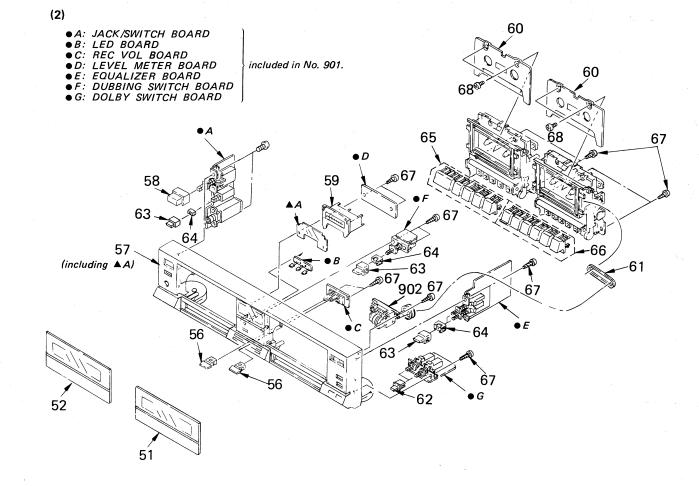
SECTION 3 EXPLODED VIEWS AND PARTS LIST

NOTE

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

The components identified by shading and mark A are critical for safety. Replace only with part number specified.

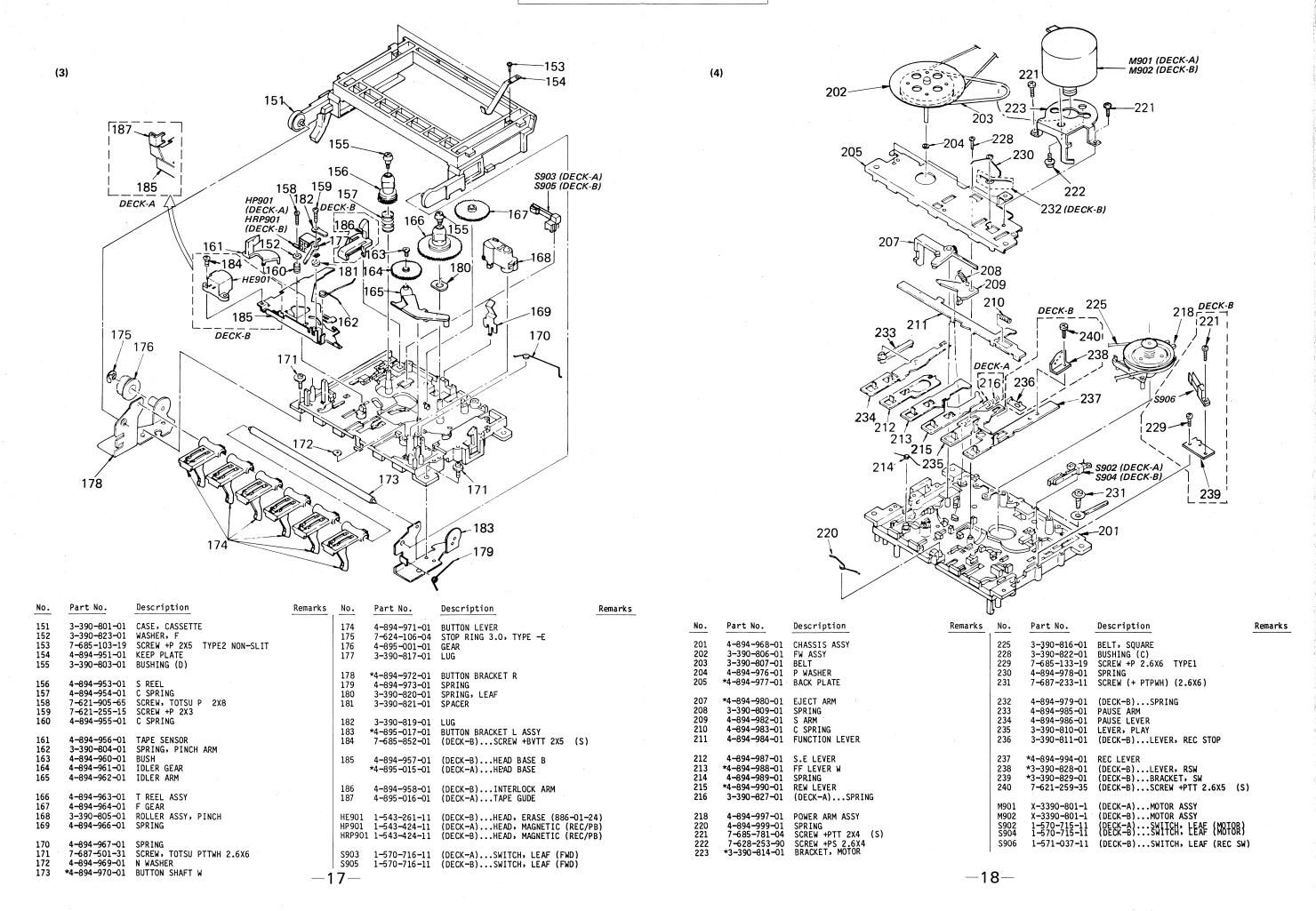




,							
No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	*3-703-713-41	STICKER, SONY SYMBOL (10)		. 9	*4-880-403-11	HEAT SINK	
2	4-886-821-01	SCREW, M3 CASE		10	*3-329-941-01	PLATE, SHIELD	
3	*3-327-853-01	CASE		11	7-682-148-01	SCREW +BYTT 3X8 (S)	
4	*3-703-244-00	BUSHING (2104), CORD		12	7-682-547-09	SCREW +B 3X6	
				13	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
5	*3-340-104-01	PANEL, BACK					
6	X-3701-069-0	FOOT ASSY, M.F		901	*A-2056-374-A	MOUNTED PCB, AUDIO	
7	*3-704-198-31	SUPPORT, PC		002010000000000000000000000000000000000	A.1-555-795-00	CORD, POWER, EULO PLUG	
. 8	*3-327-855-01	COVER (TRANSFORMER)				TRANSFORMER, POWER	

No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
51 52 56 57	3-327-848-21	LID (B), CASSETTE LID (A), CASSETTE KNOB (B), SLIDE PANEL ASSY	·	62 63 64 65	3-309-139-31 3-318-909-11 *4-864-307-00 3-340-107-01	KNOB, PUSH	
58 59 60 61		KNOB, POWER HOLDER, LED PLATE, ORNAMENTAL, CASSETTE BELT, DETECTING		66 67 68 902	3-327-850-01 7-685-646-79 7-685-133-19 1-548-596-21	SCREW +BVTP 3X8 TYPE2 N-S	

TC-W200 TC-W200



R	ef.No.	Part No.	Description	Ref.No.	Part No.	Description				
	IC303 IC304 IC305	8-759-106-41 8-759-111-44 8-759-111-44	IC UPC4570C IC UPC4570C-1 IC UPC4570C-1	0408 0409 0410	8-729-806-20 9-986-159-01 8-729-806-20	TRANSISTOR 2SA TRANSISTOR 2SA TRANSISTOR 2SA	1348			
	IC307 IC309 IC401	8-752-018-70 8-759-601-43 8-759-601-10	IC CX20187 IC M4066BP IC M4011BP	0411 0412 0413	8-729-806-20 8-729-806-28 8-729-806-28	TRANSISTOR 2SA TRANSISTOR 2SC TRANSISTOR 2SC	3399			
	IC402 IC403	8-759-601-29 8-759-601-48	IC M4030BP IC M4073BP	R101 R102 R109	1-249-417-11 1-249-435-11 1-249-417-11	CARBON	1K 33K 1K	5% 5% 5%	1/4W 1/4W 1/4W	
	J301 J302	1-507-908-11 1-507-982-11	JACK, PIN 4P (LINE IN/LINE OUT) JACK (LARGE TYPE)(HEADPHONES)	R115 R116	1-249-417-11 1-249-417-11	CARBON	1K 1K	5% 5%	1/4W 1/4W	
	L101 L102 L103	1-410-775-21 1-410-775-21 1-410-780-11	MICRO INDUCTOR 10MMH MICRO INDUCTOR 10MMH MICRO INDUCTOR 27MMH	R117 R118	1-249-423-11	CARBON	3.3K 10K		1/4W	
	L201		MICRO INDUCTOR 27MMH MICRO INDUCTOR 10MMH	R119 R120	1-249-429-11	CARBON	10K 10K 3.3K	5%	1/4W 1/4W	
	L202	1-410-775-21 1-410-780-11	MICRO INDUCTOR 10MMH MICRO INDUCTOR 27MMH	R121 R122	1-249-428-11 1-215-412-00	CARBON	8.2K 430		1/4W 1/4W	
		1-235-980-11 1-235-980-11	FILTER, LOW PASS FILTER, LOW PASS	R123	1-215-436-00		4.3K	5%	1/4W	
	M901 M902	X-3390-801-1 X-3390-801-1	(DECK-A)MOTOR ASSY (DECK-B)MOTOR ASSY	R124 R125 R126	1-215-430-00 1-249-427-11 1-249-415-11	CARBON	2.4K 6.8K 680	5% 5% 5%	1/4W 1/4W 1/4W	
	0101 0102 0103	8-729-600-27 8-729-806-38 8-729-806-38	TRANSISTOR 2SC634SP TRANSISTOR 2SC3399 TRANSISTOR 2SC3399	R127 R128 R129	1-249-429-11 1-249-421-11 1-249-437-11	CARBON	10K 2.2K 47K		1/4W 1/4W 1/4W	
	Q104 Q105 Q106	8-729-600-27 8-729-178-54 8-729-178-54	TRANSISTOR 2SC634SP TRANSISTOR 2SC2785 TRANSISTOR 2SC2785	R130 R131 R132	1-249-429-11 1-249-421-11 1-215-450-00	CARBON	10K 2.2K 16K	5% 5% 5%	1/4W 1/4W 1/4W	
	0201 0202 0203	8-729-600-27 8-729-806-38 8-729-806-38	TRANSISTOR 2SC634SP TRANSISTOR 2SC3399 TRANSISTOR 2SC3399	R133 R134 R135	1-249-430-11 1-215-446-00 1-249-435-11	CARBON	12K 11K 33K	5% 5% 5%	1/4W 1/4W 1/4W	
	Q204 Q205 Q206	8-729-600-27 8-729-178-54 8-729-178-54	TRANSISTOR 2SC634SP TRANSISTOR 2SC2785 TRANSISTOR 2SC2785	R136 R137 R138	1-247-704-11 1-215-440-00 1-249-441-11	CARBON	220 6.2K 100K	5% 5% 5%	1/4W 1/4W 1/4W	
	Q302 Q303 Q304	8-729-600-27 8-729-600-27 8-729-281-53	TRANSISTOR 2SC634SP TRANSISTOR 2SC634SP TRANSISTOR 2SC1815GR	R139 R140 R141	1-249-433-11 1-249-441-11 1-249-441-11	CARBON	22K 100K 100K	5% 5% 5%	1/4W 1/4W 1/4W	
	Q305 Q306 Q401	8-729-204-83 8-729-806-28 8-729-600-27	TRANSISTOR 2SA1048-GR TRANSISTOR 2SC3402 TRANSISTOR 2SC634SP	R142 R143 R144	1-249-425-11 1-249-425-11 1-215-479-00	CARBON	4.7K 4.7K 270K	5%	1/4W 1/4W 1/4W	
	Q402 Q403 Q404	8-729-600-27 8-729-107-26 8-729-204-83	TRANSISTOR 2SC634SP TRANSISTOR 2SD1585-K TRANSISTOR 2SA1048-GR	R145 R146 R147	1-249-404-00 1-215-472-00 1-247-849-00	CARBON	82 130K 5.6K	5%	1/4W 1/4W 1/4W	1+ 2+ 6+
	Q405 Q406 Q407	8-729-204-83 8-729-111-67 8-729-806-20	TRANSISTOR 2SA1048-GR TRANSISTOR 2SB1094-L TRANSISTOR 2SA1345	R148 R149 R150	1-249-421-11 1-249-429-11 1-249-430-11	CARBON	2.2K 10K 12K	5% 5% 5%	1/4W 1/4W 1/4W	

	EECOINI	7/L 1/11/13										
Ref.No.	Part No.	Description				· .	Ref.No.	Part No.	Description			
R151 R152 R153	1-215-479-00 1-249-404-00 1-215-472-00		270K 82 130K	5%	1/4W 1/4W 1/4W		R234 R235 R236	1-215-446-00 1-249-435-11 1-247-704-11	CARBON CARBON CARBON	11K 33K 220	5% 5% 5%	1/4W 1/4W 1/4W
R154 R155 R156	1-247-849-00 1-249-417-11 1-249-441-11	CARBON CARBON CARBON	5.6K 1K 100K	5%	1/4W 1/4W 1/4W		R237 R238 R239	1-215-440-00 1-249-441-11 1-249-433-11	CARBON CARBON CARBON	6.2K 100K 22K	5% 5% 5%	1/4W 1/4W 1/4W
R157 R158 R159	1-247-887-00 1-249-431-11 1-247-887-00	CARBON CARBON CARBON	220K 15K 220K	5% 5% 5%	1/4W 1/4W 1/4W		R240 R241 R242	1-249-441-11 1-249-441-11 1-249-425-11	CARBON CARBON CARBON	100K 100K 4.7K	5%	1/4W 1/4W 1/4W
R160 R161 R162	1-249-427-11 1-249-421-11 1-247-887-00	CARBON CARBON CARBON	6.8K 2.2K 220K	5% 5% 5%	1/4W 1/4W 1/4W		R243 R244 R245	1-249-425-11 1-215-479-00 1-249-404-00	CARBON CARBON CARBON	4.7K 270K 82		1/4W 1/4W 1/4W
R163 R164 R165	1-215-466-00 1-249-430-11 1-249-441-11	CARBON CARBON CARBON	75K 12K 100K	5% 5% 5%	1/4W 1/4W 1/4W		R246 R247 R248	1-215-472-00 1-247-849-00 1-249-421-11	CARBON CARBON CARBON	130K 5.6K 2.2K	5% 5% 5%	1/4W 1/4W 1/4W
R166 R167 R168	1-249-408-11 1-249-429-11 1-249-421-11	CARBON CARBON CARBON	180 10K 2.2K	5% 5% 5%	1/4W 1/4W 1/4W		R249 R250 R251	1-249-429-11 1-249-430-11 1-215-479-00	CARBON CARBON CARBON	10K 12K 270K	5% 5% 5%	1/4W 1/4W 1/4W
R169 R170 R171	1-249-414-11 1-215-436-00 1-249-441-11	CARBON	560 4.3K 100K		1/4W 1/4W 1/4W	**	R252 R253 R254	1-249-404-00 1-215-472-00 1-247-849-00	CARBON CARBON CARBON	82 130K 5.6K	5% 5% 5%	1/4W 1/4W 1/4W
R172 R174 R201	1-249-410-11 1-249-435-11 1-249-417-11	CARBON CARBON CARBON	270 33K 1K	5% 5% 5%	1/4W 1/4W 1/4W	:	R255 R256 R257	1-249-417-11 1-249-441-11 1-247-887-00	CARBON CARBON CARBON	1K 100K 220K	5% 5% 5%	1/4W 1/4W 1/4W
R202 R209 R215	1-249-435-11 1-249-417-11 1-249-417-11	CARBON CARBON CARBON	33K 1K 1K	5% 5% 5%	1/4W 1/4W 1/4W		R258 R259 R260	1-249-431-11 1-247-887-00 1-249-427-11	CARBON CARBON CARBON	15K 220K 6.8K	5% 5% 5%	1/4W 1/4W 1/4W
R216 R217 R218	1-249-417-11 1-249-423-11 1-249-429-11	CARBON CARBON CARBON	1K 3.3K 10K	5% 5% 5%	1/4W 1/4W 1/4W		R261 R262 R263	1-249-421-11 1-247-887-00 1-215-466-00	CARBON	2.2K 220K 75K	5% 5% 5%	1/4W 1/4W 1/4W
R219 R220 R221	1-249-429-11 1-249-423-11 1-249-428-11	CARBON	10K 3.3K 8.2K	5%	1/4W 1/4W 1/4W		R264 R265 R266	1-249-430-11 1-249-441-11 1-249-408-11	CARBON	12K 100K 180	5% 5% 5%	1/4W 1/4W 1/4W
R222 R223 R224	1-215-412-00 1-215-436-00 1-215-430-00	CARBON CARBON CARBON	430 4.3K 2.4K	5% 5% 5%	1/4W 1/4W 1/4W	:	R267 R268 R269	1-249-429-11 1-249-421-11 1-249-414-11	CARBON CARBON CARBON	10K 2.2K 560	5% 5% 5%	1/4W 1/4W 1/4W
R225 R226 R227	1-249-427-11 1-249-415-11 1-249-429-11	CARBON CARBON CARBON	6.8K 680 10K	5% 5% 5%	1/4W 1/4W 1/4W		R270 R271 R272	1-215-436-00 1-249-441-11 1-249-410-11	CARBON CARBON CARBON	4.3K 100K 270	5% 5% 5%	1/4W 1/4W 1/4W
R228 R229 R230	1-249-421-11 1-249-437-11 1-249-429-11	CARBON CARBON CARBON	2.2K 47K 10K	5% 5% 5%	1/4W 1/4W 1/4W		R274 R301 R302	1-249-435-11 1-247-704-11 1-247-704-11		33K 220 220	5% 5% 5%	1/4W 1/4W 1/4W
R231 R232 R233	1-249-421-11 1-215-450-00 1-249-430-11	CARBON	2.2K 16K 12K	5% 5% 5%	1/4W 1/4W 1/4W		R303 R304 R305	1-249-429-11 1-249-417-11 1-249-417-11	CARBON	10K 1K 1K	5% 5% 5%	1/4W 1/4W 1/4W

ELECTRICAL PARTS

	222011120				
Ref.No.	Part No.	Description			
R306	1-249-431-11	CARBON	15K	5%	1/4W
R307	1-247-704-11	CARBON	220	5%	1/4W
R308	1-247-704-11	CARBON	220	5%	1/4W
R309	1-249-425-11	CARBON	4.7K	5%	1/4W
R313	1-249-404-00	CARBON	82	5%	1/4W
R314	1-247-688-11	CARBON	10	5%	1/4W
R315	1-249-433-11	CARBON	22K	5%	1/4W
R316	1-249-433-11	CARBON	22K	5%	1/4W
R317	1-249-429-11	CARBON	10K	5%	1/4W
R318	1-249-429-11	CARBON	10K	5%	1/4W
R319	1-249-427-11	CARBON	6.8K	5%	1/4W
R320	1-247-706-11	CARBON	330	5%	1/4W
R321	1-249-413-11	CARBON	470	5%	1/4W
R322	1-249-433-11	CARBON	22K	5%	1/4W
R323	1-249-441-11	CARBON	100K	5%	1/4W
R325	1-249-417-11	CARBON	1K	5%	1/4W
R326	1-215-469-00	METAL	100K	1%	1/6W
R401	1-247-717-11	CARBON	2.2K	5%	1/4W
R402	1-247-717-11	CARBON	2.2K	5%	1/4W
R403	1-247-717-11	CARBON	2.2K	5%	1/4W
R404	1-247-717-11	CARBON	2.2K	5%	1/4W
R405	1-249-425-11	CARBON	4.7K	5%	1/4W
R406	1-249-422-11	CARBON	2.7K	5%	1/4W
R407	1-249-420-11	CARBON	1.8K	5%	1/4W
R408	1-249-420-11	CARBON	1.8K	5%	1/4W
R409	1-249-408-11	CARBON	180	5%	1/4W
R410	1-249-420-11	CARBON	1.8K	5%	1/4W
R411	1-249-408-11	CARBON	180	5%	1/4W
R412	1-249-425-11	CARBON	4.7K	5%	1/4W
R413	1-249-437-11	CARBON	47K	5%	1/4W
R414	1-249-437-11	CARBON	47K	5%	1/4W
R415	1-249-429-11	CARBON	10K	5%	1/4W
R416	1-249-429-11	CARBON	10K	5%	1/4W
R417	1-249-437-11	CARBON	47K	5%	1/4W
R418	1-249-437-11	CARBON	47K	5%	1/4W
R419	1-247-887-00	CARBON	220K	5%	1/4W
R420	1-249-437-11	CARBON	47K	5%	1/4W
R421	1-249-429-11	CARBON	10K	5%	1/4W
R422	1-249-437-11	CARBON	47K	5%	1/4W
R423	1-249-437-11	CARBON	47K	5%	1/4W
R424	1-249-427-11	CARBON	6.8K	5%	1/4W
R425	1-249-435-11	CARBON	33K	5%	1/4W
R426 R427 R428 R429	1-249-437-11 1-249-425-11 1-249-437-11 1-249-429-11	CARBON CARBON CARBON CARBON	47K 4.7K 47K 10K	5% 5% 5%	1/4W 1/4W 1/4W 1/4W

Ref.No.	Part No.	Description
R430	1-249-417-11	CARBON 1K 5% 1/4W
R430	1-249-417-11	
R432	1-249-417-11	CARBON 1K 5% 1/4W
R433	1-249-425-11	CARBON 4.7K 5% 1/4W
R434	1-249-425-11	CARBON 4.7K 5% 1/4W
R435	1-249-429-11	CARBON 10K 5% 1/4W
D436	1 015 420 00	CARBON 2.4K 5% 1/4W
R436	1-215-430-00	
R437	1-215-402-00	CARBON 160 5% 1/4W
R438	1-249-417-11	CARBON 1K 5% 1/4W
R439	1-249-417-11	CARBON 1K 5% 1/4W
RV 101	1-228-994-00	RES, ADJ, CARBON 10K
RV102	1-228-994-00	RES, ADJ, CARBON 10K
RV103	1-228-994-00	RES, ADJ, CARBON 10K
DV104	1 007 000 11	DEC MAD CLIDE OOK (DEC LEVEL LEET)
RV 104	1-237-828-11	RES, VAR, SLIDE 20K (REC LEVEL:LEFT)
RV201	1-228-994-00	RES, ADJ, CARBON 10K
RV202	1-228-994-00	RES, ADJ, CARBON 10K
RV 203	1-228-994-00	RES, ADJ, CARBON 10K
RV204	1-237-827-11	RES, VAR, SLIDE 20K (REC LEVEL:RIGHT)
RV401	1-228-991-00	RES, ADJ, CARBON 2.2K
DV400	1 000 000 00	DEC 103 01000U 1U
RV402	1-228-990-00	RES, ADJ, CARBON 1K
RV403	1-228-991-00	RES, ADJ, CARBON 2.2K
RV404	1-228-990-00	RES, ADJ, CARBON 1K
RY301	1-515-614-11	RELAY
S302	1-570-531-11	SWITCH, PUSH (2 KEY)(DOLBY NR)
\$303	1-570-980-11	SWITCH, PUSH (2 KEY) (TAPE: DECK-B)
S304	1-570-879-11	SWITCH, PUSH (1 KEY) (TAPE:DECK-A)
S401	1-570-978-11	SWITCH, PUSH (1 KEY)(DUBBING SPEED)
		SWITCH, PUSH (1 KEY) (POWER)
S902		(DECK-A)SWITCH, LEAF (MOTOR)
3902	1-570-715-11	(DECK-A)SWITCH LEAF (MOTOR)
\$903	1-570-716-11	(DECK-A)SWITCH, LEAF (FWD)
S904	1-570-715-11	(DECK-B)SWITCH, LEAF (MOTOR)
S905	1-570-716-11	(DECK-B)SWITCH, LEAF (FWD)
S906	1-571-037-11	(DECK-B)SWITCH, LEAF (REC SW)
SPK101	1-235-186-00	ENCAPSULATED COMPONENT
	1-235-186-00	ENCAPSULATED COMPONENT
T301	1-433-303-11	TRANSFORMER, BIAS OSCILLATION TRANSFORMER, POWER
HAOT W	*T_#40_9N9_TT	I NAMBE UKINEK . FUNEK
AC	CESSORY & PACK	ING MATERIAL

ACCESSORY & PACKING MATERIAL

Part No.	Description
1-558-543-11 *3-304-973-00	CORD, CONNECTION SHEET, PROTECTION
3-327-843-01 3-327-844-21 3-769-328-11	CUSHION INDIVIDUAL CARTON MANUAL, INSTRUCTION

The components identified by shading and mark Aare critical for safety.
Replace only with part number specified.

TROUBLE CHECKS

Should any problem persist after you have made these checks, consult your nearest Sony service facility. Before proceeding with these trouble checks, first check these basic points:

- The power cord must be firmly connected.
- Amplifier connections must be firmly made.

	Trouble	Cause and/or remedy					
E	The tape does not run when the operation	The cassette is not properly inserted.					
<u>S</u>	button is pressed.	The cassette holder is not properly closed.					
TAPE OPERATION BUTTONS AND TAPE TRANSPORT		The button is depressed. Depress the button again to release the pause mode.					
AND TA	The transport noise seems excessively loud in rewind or fast forward mode.	No trouble. This situation depends upon the cassette used.					
SNOTE	The automatic shut-off mechanism activates before the end of the tape.	The cassette is defective.					
N N	The ● button does not activate.	No cassette is in the holder.					
PERATIC	in the second of	The cassette tab has been removed. → Cover the hole with plastic tape.					
TAPEO	The fast forward or rewind mode does not shut off automatically.	No trouble. Press ■ ♠ to shut off the fast forward or rewind mode.					
	Recording or playback cannot be made or	The heads are dirty.					
	there is a decrease in sound level.	The connections are not made properly.					
AC		The input selector of the amplifier is not set to the correct position.					
٩٨B	Excessive wow and flutter or drop out	The heads, capstans or pinch rollers are dirty.					
7	Incomplete erasure	The erase head is dirty.					
3 AND PLAYBACK	Increase of noise or erasure	Magnetic build-up on the head. → Demagnetize the head.					
RECORDING	Unbalanced tone in higher frequencies	The DOLBY NR switch is not set to the correct position. ➡ During playback, set the switch to the same position used in recording.					
#		The TAPE select switches are not set to the correct position during playback on deck B.					
SE.	A hum is heard	The deck is placed directly on or under the amplifier. Move the deck away from the amplifier.					
NOISE	Noise is recorded	Recording is made near a television set or a color monitor. Move the deck away from the televison set or color monitor.					

SECTION 4 ELECTRICAL PARTS LIST

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be antici-pated when ordering these items.
- · If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be emitted. circuits may be omitted.

CAPACITORS: MF:μF, PF:μμF.

RESISTORS

· All resistors are in ohms. · F : nonflammable

COILS · MMH : mH, UH : μH

SEMICONDUCTORS

In each case, U : μ, for example: UA...: μA..., UPA...: μPA..., UPC...: μPC, UPD...: μPD...

The components identified by shading and mark Aare critical for safety.
Replace only with part number specified.

ELECTRICAL PARTS

Ref.No.	Part No.	Description				Ref.No.	Part No.	Description			
901 902 903 <i>[</i>	*A-2056-374-A 1-548-596-21 3.1-555-795-00	MOUNTED PCB, COUNTER, TAP CORD, POWER,	E (MIDDLE TY	PE)		C153 C203 C204	1-124-767-00 1-124-925-11 1-124-925-11	ELECT ELECT ELECT	2.2MF 2.2MF 2.2MF	20% 20% 20%	50V 50V 50V
C103	1-124-925-11	ELECT	2.2MF	20%	50V	C205	1-124-499-11	ELECT	1MF	20%	50V
C104	1-124-925-11	ELECT	2.2MF	20%	50V	C206	1-124-925-11	ELECT	2.2MF	20%	50V
C105	1-124-499-11	ELECT	1MF	20%	50V	C207	1-162-290-31	CERAMIC	470PF	10%	50V
C106	1-124-925-11	ELECT	2.2MF	20%	50V	C208	1-162-282-31	CERAMIC	100PF	10%	50V
C107	1-162-290-31	CERAMIC	470PF	10%	50V	C209	1-136-157-00	FILM	0.022MF	5%	50V
C108	1-162-282-31	CERAMIC	100PF	10%	50V	C210	1-124-767-00	ELECT	2.2MF	20%	50V
C109	1-136-157-00	FILM	0.022MF	5%	50V	C216	1-124-925-11	ELECT	2.2MF	20%	50V
C110	1-124-767-00	ELECT	2.2MF	20%	50V	C217	1-124-767-00	ELECT	2.2MF	20%	50V
C116	1-124-925-11	ELECT	2.2MF	20%	50V	C218	1-130-479-00	MYLAR	0.0047MF	5%	50V
C117	1-124-767-00	ELECT	2.2MF	20%	50V	C219	1-136-173-00	FILM	0.47MF	5%	50V
C118	1-130-479-00	MYLAR	0.0047MF	5%	50V	C220	1-136-167-00	FILM	0.15MF	5%	50V
C119	1-136-173-00	FILM	0.47MF	5%	50V	C221	1-136-155-00	FILM	0.015MF	5%	50V
C120	1-136-167-00	FILM	0.15MF	5%	50V	C222	1-136-169-00	FILM	0.22MF	5%	50V
C121	1-136-155-00	FILM	0.015MF	5%	50V	C223	1-136-163-00	FILM	0.068MF	5%	50V
C122	1-136-169-00	FILM	0.22MF	5%	50V	C224	1-136-161-00	FILM	0.047MF	5%	50V
C123	1-136-163-00	FILM	0.068MF	5%	50V	C225	1-130-481-00	MYLAR	0.0068MF	5%	50V
C124	1-136-161-00	FILM	0.047MF	5%	50V	C226	1-136-153-00	FILM	0.01MF	5%	50V
C125	1-130-481-00	MYLAR	0.0068MF	5%	50V	C227	1-124-925-11	ELECT	2.2MF	20%	50V
C126	1-136-153-00	FILM	0.01MF	5%	50V	C229	1-162-290-31	CERAMIC	470PF	10%	50V
C127	1-124-925-11	ELECT	2.2MF	20%	50V	C230	1-162-282-31	CERAMIC	100PF	10%	50V
C129	1-162-290-31	CERAMIC	470PF	10%	50V	C231	1-136-157-00	FILM	0.022MF	5%	50V
C130	1-162-282-31	CERAMIC	100PF	10%	50V	C232	1-162-284-31	CERAMIC	150PF	10%	50V
C131	1-136-157-00	FILM	0.022MF	5%	50V	C233	1-136-273-91	FILM	75PF	5%	630V
C132	1-162-284-31	CERAMIC	150PF	10%	50V	C234	1-161-377-00	CERAMIC	0.0047MF	30%	16V
C133	1-136-273-91	FILM	75PF	5%	630V	C235	1-161-327-00	CERAMIC	0.0033MF	30%	16V
C134	1-161-377-00	CERAMIC	0.0047MF	30%	16V	C238	1-162-289-31	CERAMIC	390PF	10%	50V
C135	1-161-327-00	CERAMIC	0.0033MF	30%	16V	C239	1-124-927-11	ELECT	4.7MF	20%	50V
C138	1-162-289-31	CERAMIC	390PF	10%	50V	C240	1-124-446-11	ELECT	47MF	20%	10V
C139	1-124-927-11	ELECT	4.7MF	20%	50V	C241	1-123-875-11	ELECT	10MF	20%	50V
C140	1-124-446-11	ELECT	47MF	20%	10V	C242	1-136-159-00	FILM	0.033MF	5%	50V
C141	1-123-875-11	ELECT	10MF	20%	50V	C243	1-136-153-00	FILM	0.01MF	5%	50V
C142	1-136-159-00	FILM	0.033MF	5%	50V	C244	1-130-474-00	MYLAR	0.0018MF	5%	50V
C143	1-136-153-00	FILM	0.01MF	5%	50V	C245	1-130-477-00	MYLAR	0.0033MF	5%	50V
C144	1-130-474-00	MYLAR	0.0018MF	5%	50V	C246	1-130-480-00	MYLAR	0.0056MF	5%	50V
C145	1-130-477-00	MYLAR	0.0033MF	5%	50V	C247	1-136-154-00	FILM	0.012MF	5%	50V
C146	1-130-480-00	MYLAR	0.0056MF	5%	50V	C248	1-130-478-00	MYLAR	0.0039MF	5%	50V
C147	1-136-154-00	FILM	0.012MF	5%	50V	C249	1-130-471-00	MYLAR	0.001MF	5%	50V
C148	1-130-478-00	MYLAR	0.0039MF	5%	50V	C250	1-130-473-00	MYLAR	0.0015MF	5%	50V
C149	1-130-471-00	MYLAR	0.001MF	5%	50V	C251	1-130-478-00	MYLAR	0.0039MF	5%	50V
C150	1-130-473-00	MYLAR	0.0015MF	5%	50V	C252	1-130-481-00	MYLAR	0.0068MF	5%	50V
C151	1-130-478-00	MYLAR	0.0039MF	5%	50V	C253	1-124-767-00	ELECT	2.2MF	20%	50V
C152	1-130-481-00	MYLAR	0.0068MF	5%	50V	C303	1-124-446-11	ELECT	47MF	20%	10V

								-	
Ref.No.	Part No.	Description				Ref.No.	Part No.	Description	
C304 C305 C306	1-124-444-00 1-124-444-00 1-124-446-11	ELECT ELECT ELECT	220MF 220MF 47MF	20% 20% 20%	10V 10V 10V	D104 D105 D106	8-719-942-15 8-719-302-74 8-719-302-74	DIODE MPG3877S DIODE SEL2210W DIODE SEL2210W	
C307 C308 C309	1-124-446-11 1-141-225-00 1-124-499-11	ELECT CAP, TUNING, ELECT	47MF TRIMAR 1MF	20% 20%	10V 50V	D107 D201 D202	8-719-302-74 8-719-942-15 8-719-942-15	DIODE SEL2210W DIODE MPG3877S DIODE MPG3877S	
C310 C311 C312	1-124-925-11 1-130-482-00 1-130-478-00	ELECT MYLAR MYLAR	2.2MF 0.0082MF 0.0039MF	20% 5% 5%	50V 50V 50V	D203 D204 D205	8-719-942-15 8-719-942-15 8-719-302-74	DIODE MPG3877S DIODE MPG3877S DIODE SEL2210W	
C313 C314 C315	1-130-478-00 1-124-902-00 1-124-499-11	MYLAR ELECT ELECT	0.0039MF 0.47MF 1MF	5% 20% 20%	50V 50V 50V	D206 D207 D301	8-719-302-74 8-719-302-74 8-719-940-76	DIODE SEL2210W DIODE SEL2210W DIODE 1SS132	
C316 C317 C318	1-124-446-11 1-124-446-11 1-124-444-00	ELECT ELECT ELECT	47MF 47MF 220MF	20% 20% 20%	10V 10V 10V	D302 D401 D402	8-719-940-76 8-719-200-77 8-719-200-77	DIODE 1SS132 DIODE 1OE2N DIODE 1OE2N	
C319 C320 C321	1-124-444-00 1-136-562-11 1-162-294-31	ELECT FILM CERAMIC	220MF 0.0082MF 0.001MF	20% 5% 10%	10V 630V 50V	D403 D404 D405	8-719-200-77 8-719-200-77 8-719-933-33	DIODE 10E2N DIODE 10E2N DIODE HZS6A1L	
C322 C323 C401	1-162-294-31 1-161-494-00 1-126-105-11	CERAMIC CERAMIC ELECT	0.001MF 0.022MF 1000MF	10% 20%	50V 25V 35V	D406 D407 D409	8-719-940-76 8-719-940-76 8-719-940-76	DIODE 1SS132 DIODE 1SS132 DIODE 1SS132	100 Marin (100 Marin (
C402 C403 C404	1-124-555-00 1-124-555-00 1-126-101-11	ELECT ELECT ELECT	1000MF 1000MF 100MF	20% 20% 20%	16V 16V 16V	D411 D412 D413	8-719-940-76 8-719-940-76 8-719-940-76	DIODE 1SS132 DIODE 1SS132 DIODE 1SS132	
C405 C406 C407	1-126-101-11 1-124-446-11 1-124-472-11	ELECT ELECT ELECT	100MF 47MF 470MF	20% 20% 20%	16 V 10 V 10 V	D414 D415 D416	8-719-940-76 8-719-940-76 8-719-940-76	DIODE 1SS132 DIODE 1SS132 DIODE 1SS132	
C408 C409 C410	1-124-472-11 1-162-294-31 1-162-294-31	ELECT CERAMIC CERAMIC	470MF 0.001MF 0.001MF	20% 10% 10%	10V 50V 50V	D417 D418 D419	8-719-940-76 8-719-940-76 8-719-940-76	DIODE 1SS132 DIODE 1SS132 DIODE 1SS132	
C411 C412 C413	1-123-875-11 1-123-875-11 1-161-494-00	ELECT ELECT CERAMIC	10MF 10MF 0.022MF	20% 20%	50V 50V 25V	D420 D421 D422	8-719-940-76 8-719-940-76 8-719-303-24	DIODE 1SS132 DIODE 1SS132 DIODE SEL1120W	
C414 C415	1-123-875-11 1-124-927-11	ELECT ELECT	10MF 4.7MF	20% 20%	50V 50V	D423 D424 D425	8-719-303-24 8-719-303-24 8-719-933-63	DIODE SEL1120W DIODE SEL1120W DIODE HZS11A1L	
CN309	*1-564-507-11 *1-564-509-11 *1-564-505-11	PLUG, CONNECT PLUG, CONNECT PLUG, CONNECT	TOR 6P		er er	D426 HE901	8-719-933-36 1-543-261-11	DIODE HZS6B1L (DECK-B)HEAD, E	RASE (886-01-24)
CN402	*1-564-509-11 *1-564-511-11 *1-564-505-21	PLUG, CONNECT PLUG, CONNECT PLUG, CONNECT	TOR 8P				1-543-424-11 1-543-424-11	(DECK-A)HEAD, M	
D101 D102 D103	8-719-942-15 8-719-942-15 8-719-942-15	DIODE MPG3877 DIODE MPG3877 DIODE MPG3877	7S				8-759-912-79 8-759-912-79 8-759-600-02	IC IR2E02	